THATTATTOM TOTOCHOODICE COMM

INSTRUCTIONS

PLEASE COMPLETE THIS DOCUMENT, INSERTING THE REQUESTED INFORMATION AFTER EACH QUESTION. MAIL THE COMPLETED FORM, AND ANY ACCOMPANYING ELECTRONIC DOCUMENTS, VIA EMAIL TO ANGELA MUISE IN THE LAW DEPARTMENT. IF ANY SUPPORTING MATERIALS ARE BEING SUBMITTED IN HARD COPY, PLEASE PRINT A COPY OF THIS FORM, ATTACH TO THE HARD COPY MATERIALS AND MAIL TO ANGELA MUISE, LAW DEPARTMENT, 35 PARKWOOD DRIVE, HOPKINTON.

I. TITLE OF INVENTION:
Encoding SCSI Requests for Transmission using TCP/IP

II.	INF	ORMATION	ABOUT	INVENTOR(S):
	1.	Name:	Dean 3	Throop

 Home Address:112 Stratford Dr
Chapel Hill NC 27516
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(If more than one individual contributed to the invention,

III BACKGROUND INFORMATION

1.	Will	a	DG/EMC	product	use	this	invention?
	YES			_			

supply the above information for each additional inventor.)

If so, what is the internal name of the DG/EMC product incorporating this invention?

Flare for Alpine Phase 2

Has the product been publicly announced by DG/EMC?

I don't think so

If announced, what name/model is the product marketed under?

If not yet announced, what is the anticipated announce date for the product?

May 5, 2000 (scheduled ship date)

On what date did the idea of the invention first come to mind? _____

Aug 1999

3.	Other than discussions among the inventors named above, to whom was the invention first disclosed:
	The date of that disclosure: I discussed this with Stephen Todd (1st in Aug 1999) It has been implemented by Lorenzo Bailey, Bob Frazier, and David Pressley.
4.	On what date was the idea of the invention first reduced to writing in whole or in part? (This would include any form of handwritten, typed or electronic record. Send a copy of this material.)
5.	There's a specification written October 1999 Has construction/development of this invention started? Started October or November 1999
	If so, date started:
	Has the invention been built/developed and operated successfully?Its been working since januay of 2000
	If so, date of first successful operation:
6.	Has this invention been disclosed outside of DG/EMC? I don't think so
	If so, were the disclosures under a non-disclosure agreement?
4	Give dates, locations, and other relevant information about all disclosures outside of DG/EMC:
7.	List all functional specs, design specs, management presentations and other available materials that describe or discuss the design or operation of this invention. See attached

IV. TECHNICAL DISCLOSURE OF INVENTION

1. State in general terms the nature of the invention.

An encoding of SCSI requests on TCP/IP.

2. Describe any old method(s) of performing the function of the invention, indicating the disadvantages and problems with the old methods that are overcome by the invention. (Note: Describe all prior methods of which the inventors have knowledge, not just prior DG/EMC methods. It is sufficient to state the current knowledge and understanding of the inventors. It is not necessary that the inventors conduct research to identify all "old" methods.)

SCSI requests are generally sent over wires created explicitly for just that. Two common implementations use parallel copper wires and fibre channel lines. The wires are connected using special purpose hardware boards (SCSI controllers) plugged into computers.

The operating system running on the computers has software that uses the SCSI controllers for doing industry standard block I/O. Because the operating systems have exclusive use of the SCSI controllers, it is often difficult to write a user program that can send vendor specific SCSI requests using the SCSI controllers.

The vendor specific requests are useful for configuring the target SCSI device and for monitoring it. Monitoring to observe failures and to track performance.

Some operating systems provide a user pass through capability that allows a user program to send vendor specific SCSI requests to a target device. These pass through capabilities are operating system specific and don't always work very well. Some times Operating system SCSI pass through requests will stop other traffic until they complete (thus degrading performance). Some operating systems do not provide any SCSI pass through mechanism at all.

Another alternative for a user program to access a target device is to connect to it using a serial cable. (We do this right now with clariion). The user program encodes the vendor specific SCSI requests and transmits them to the target device over a serial line. This is available over a wide variety of operating system.

Unfortunately this encoding is error prone and rather slow.

By encoding SCSI requests and transmitting them using TCP/IP, we have a fast and widely available way for user applications to send vendor specific SCSI request to a target device.

Describe the design and operation of the invention, indicating the specific features believed to be new and all advantages or improvements over the old methods. Use drawings, schematics, timing diagrams, flowcharts, and/or sketches as appropriate for a clear and complete understanding of the invention.

The specification is available on the web at

http://thiinman.rtp.dg.com/~flare/projects/flare_projects.htm You will need username=clariion, password=diskus

->alpline network
->Flare Network Interface to Navisphere-2

4. Are you aware of alternative ways in which the invention could be used or implemented? If so, describe generally (a) other applications for the invention (for example, other types of products that could benefit from the invention) and (b) alternative ways the invention could be constructed or implemented.

There is a draft for a similar implementation. A URL for this Internet-Draft is: http://www.ietf.org/internet-drafts/draft-satran-iscsi-00.txt

I've written a brief comparison of our approach with the above draft and our implementation and I'll attach that.

Name	of	Person	Preparing	This	Disclosure:_	Dean	Throop

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Date	of	Disclosure: